

Listing of Claims:

1. (currently amended). An oligonucleotide synthesizer comprising a reaction chamber and a lid enclosure, said lid enclosure containing comprising a ventilation system, wherein in an open position, said lid enclosure provides a substantially ventilated workspace, wherein in said open position said ventilated workspace is of sufficient size to permit an operator's hands to enter said reaction chamber.

2 – 4 (canceled).

5. (original). A system comprising a plurality of oligonucleotide synthesizers of Claim 1.

6. (original). The system of Claim 5, wherein said system comprises 100 or more of said synthesizers.

7 – 19 (canceled).

20. (previously presented). A ventilated nucleic acid synthesizer system comprising;

- a) a ventilation tube,
- b) a lid enclosure on a nucleic acid synthesizer comprising; a) a top cover with a ventilation slot, and b) a top enclosure comprising a top plate with a ventilation opening, wherein said top enclosure is attached to said top cover to form a substantially enclosed space over said top cover, and
- c) a vacuum source connected to said ventilated system.

21. (canceled).

22. (original). The system of claim 20, wherein said vacuum source comprises a centralized vacuum system.

23. (canceled).

24. (original). The oligonucleotide synthesizer of Claim 1, wherein said reaction chamber comprises a cartridge configured to hold a plurality of nucleic acid synthesis columns.

25. (previously presented). A method for decreasing the quantity of vapor emissions released into the surrounding atmosphere created during the use of an oligonucleotide synthesizer, said method comprising;

- a) providing an oligonucleotide synthesizer of Claim 1
- b) connecting said oligonucleotide synthesizer to a ventilation system connected to a source of negative pressure or vacuum
- c) operating said source of negative pressure or vacuum.

26. (previously presented). A method according to Claim 25, said method comprising connecting a plurality of oligonucleotide synthesizers via said ventilation system to a centralized source of negative pressure or vacuum.

27. (previously presented). A method according to Claim 25, said method comprising the additional step;

- d) wherein said operating said source of negative pressure or vacuum is sufficient to decrease the quantity of vapor emission created during the use of an oligonucleotide synthesizer.

28. (previously presented). A method according to Claim 25, said method comprising said operating said source of negative pressure or vacuum constantly during the use of said oligonucleotide synthesizer, and during loading and unloading of reagents and products from said oligonucleotide synthesizer.

29. (previously presented). A method according to Claim 25, said method comprising said operating said source of negative pressure or vacuum only when said lid enclosure comprising a ventilation system is in said open position.

30. (previously presented). A method according to Claim 29, wherein said operating of said source of negative pressure of vacuum is triggered to occur automatically whenever said lid enclosure is placed in said open position.